

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	David Harbec <i>et al.</i>	Customer Number:	020988
Docket No.:	1770-322US	Confirmation No.:	2219
Serial No.:	10/535,050	Group Art:	1793
Filing Date:	January 30, 2006	Examiner:	Barcena, Carlos
Title:	METHOD FOR PRODUCING CARBON NANOTUBES USING A DC NON-TRANSFERRED THERMAL PLASMA TORCH		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF DR. BOULOS

UNDER 37 C.F.R. § 1.132

Sir, I hereby declare and state:

I have held the position of professor at the University of Sherbrooke, 2500 University Boulevard, Sherbrooke, Quebec, over the period 1973-2006. Since my retirement in January 2007, I have continued to be associated with the University of Sherbrooke as an adjunct and more recently as Emeritus professor

1. I have been conducting research in the field of thermal plasmas fundamentals and applications over the past thirty seven (37) years and have authored more than 150 scientific refereed journal publications on the subject. Please find enclosed a copy of my resume.

2. I am familiar with the US patent application No. 10/535.050 filed 11.17.2003 in the name of Harbec et al. I have read the Office Action mailed 08/11/2009 and all of the prior art references cited therein.
3. I have also read the Declaration of Dr. Jean-Luc Meunier regarding the nature of the process claimed in the referenced patent application and his comments about what a person skilled in the art would understand from the claimed invention as to how to select the appropriate operating parameters for the process.
4. I have also read in this Declaration the views of Dr. Meunier regarding what is taught in the prior art references and I do not believe that any of these references alone or combined can be said to provide the process as claimed in the Harbec et al patent application. I also believe that the information found in the patent application, including the claims, allows the person skilled in the art to readily practice the process. If any testing is required, it would definitely fall in the realm of "routine experimentation".
12. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like, so made, are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,
Maher I. Boulos



Date: November 10th 2009



Maher I. Boulos

Curriculum Vitae

Present position:

Professor Emeritus of Chemical Engineering,
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Education

Ph.D.: Chemical Eng., University of Waterloo, Ontario (1972)
M.Sc.A. Chemical Eng., University of Waterloo, Ontario. (1968).
BSc, Chemical Engineering, Cairo University Egypt (1963).

1. CAREER PROFILE

2007 - to date	Professor Emeritus, Department of Chemical Engineering, Université de Sherbrooke, Québec, Canada
1990 - to date	President and Director General, Tekna Plasma Systems Inc., Sherbrooke, Québec, Canada
1981/2006	Professor, Department of Chemical Engineering, Université de Sherbrooke, Québec, Canada
1983/2005	Vice president, International Thermal Plasma Engineering, Minnesota Consulting Corporation, St-Paul (MN) USA
1989/2004	Director, Interuniversity Plasma Technology Research Centre (CRTP), Université de Sherbrooke, Québec, Canada
1980/1986	Chairman, Department of Chemical Engineering, Université de Sherbrooke Sherbrooke, Québec, Canada
1976/1981	Associate Professor, Department of Chemical Engineering, Université de S Sherbrooke, Québec, Canada
1973/1976	Assistant Professor, Departement of Chemical Engineering, Université de Sherbrooke, Sherbrooke, Québec, Canada
1972/1973	Post Doctoral Fellow, Departement of Chemical Engineering, McGill University, Montréal, Québec. Canada
1966/1972	Research Assistant and Senior Demonstrator, Department of Chemical Engineering, University of Waterloo, Ontario, Canada
1963/1966	Teaching Assistant, Aswant Institute of Technology, Egypt

PROFESSIONAL DISTINCTIONS

In the course of his Carrere Professor Boulos has recieved some of the highest distinctions by professional scientific associations and the governement of Québec. These include the following distinctions;

- **Prix Lionel Boulet 2007**, the highest distinction offered by the Gouvernement of Québec in the framework of the '**Prix du Québec 2007**' for lif-time achievements and contribution to the advancement of plasma science and the economical development of the province of Québec.
- **Prix Synergie (RDC) du CRSNG** offered in **octobre 2006** jointly to Professor Boulos and the University of Sherbrooke for lif-time achievements in the area of technology transfer and industrial developments.
- **The Léonard de Vinci medal** offered in **(2004)** to professor Boulos by the University of Sherbrooke in recognition for his exceptional contribution to the development of the Faculty of Engineering.
- In **June 2004**, Professor Boulos was admitted as Fellow of the **Canadian Academy of Engineering** for his life-time contribution to the education and practice of Engineering in Canada. This distinction is limited to 250 members of the Academy among the 170,000 practicing professional engineers in Canada.

- '**Prix innovateur**' offered in novembre 2003, by the '**l'Association de la recherche industrielle du Québec**' (**ADRIQ**) in recognition for exceptional life-time contribution to technological developments in the province of Québec.
- **Prix J.-Armand Bombardier**, September 2003, offered by l'Association francophone pour le savoir (ACFAS) for his outstanding contribution to innovation and technological developments.
- In May 2003, Professor Boulos was inducted to the **Thermal Spray Society (TSS-ASM) 'Hall of Fame'** For his outstanding contributions to the advancement of science and industrial application of thermal spray coating technology.
- **Jules Stachiewicz Medal** offered to Professor Boulos in **October 1996**, jointly by the **Canadian Society of Chemical Engineering and the Canadian Society of Mechanical Engineers** for his contribution to the field of heat transfer under thermal plasma conditions.

2. PERSONNAL CONTRIBUTIONS

2.1 Teaching

Professor Boulos has been at the Université de Sherbrooke over the past thirty five (35) years. During this time, he taught a number of undergraduate and graduate courses in the area of thermodynamics, fluid mechanics and heat transfer, unit operations, particulate dynamics, system analysis, instrumentation and theory of experimentation, particulate systems, chemical process design and thermal plasma technology. He has received the undergraduate student's award for the best teacher for four years: 1989, 1990, 1991 and 1993.

Professor Boulos has also participated in the teaching of numerous continuing education courses offered by different national and international scientific societies such as IUPAC summer school on plasma chemistry, and ASM TSS continuing education course on thermal spray technology.

2.2 Administration

Professor Boulos has been an active member of the academic community at the Université de Sherbrooke. He has been chairman of the Department of Chemical Engineering for two (2) consecutive 3-year terms (1980-1986). He has been the founding director of the McGill-Sherbrooke Interuniversity Plasma Technology Research Centre over the period (1989 to 2004).

On the international level, Professor Boulos has been a member of the IUPAC subcommittee on Plasma Chemistry for nine years (1981-1990) and chairman of that committee for the period 1986-1989. He has also been a member of a number of conference organization committees and chairman of the international and local organizing committees of the 6th International Symposium on Plasma Chemistry and workshops on Industrial Applications of thermal plasma technology, which were held in Montreal and Sherbrooke (Québec) in July 1983.

2.3 Academic research

Professor Boulos has maintained an active research program in thermal plasma technology, fluid mechanics particle dynamics and heat transfer. He is recognized as a world leader in the field of induction plasma technology and has been plenary and invited speaker in a number of national and international scientific conferences. He has been inducted to the ASM TSS Hall of Fame in May 2003 in recognition of his numerous contributions as technologist, educator and pioneer in the areas of flow modeling; torch design; plasma jet and particle characterization; spheroidization and particle syntheses; and, nano particle production. Professor Boulos has also been the recipient of the J.-Armand Bombardier prize of the ACFAS in September 2003, and the ADRIQ Inovator prize in Nov 2003, for his numerous contributions in science and technology.

Professor Boulos has also been the recipient of the Jules Stachiewicz Medal in 1996 offered jointly by the Canadian Society of Chemical Engineering and the Canadian Society of Mechanical Engineering for his contribution in the field of heat transfer under plasma conditions, and the Governor's Medal of the University of Sherbrooke in 1985.

He is a member of the editorial boards of the following scientific journals:

- Plasma Chemistry Plasma Processing, Plenum Press, USA (since 1985);
- Journal of High Temperature Materials Processes, Begel House Press, United Kingdom (since 1995)

Professor Boulos has been acting as scientific referee for the following journal and funding organizations: J. Plasma Sources, J. High Temperatures Chemical Processes, J. Plasma Chemistry Plasma Processing, Am. Inst. Chem. Eng., Canadian J. Chemical Eng., IEEE Trans. Plasma Chemistry, J. of Applied Physics: J. Phys. D, Int. J. Heat and Mass Transfer, CRSNG, FCAR, NSF, DOE. He has also been a consultant for a number of industrial organizations worldwide.

2.4 Industrial achievements

Dr. Boulos has also been an active member of the profession engineering community and has twenty five (25) patents and patent applications to his credit. In 1990 he formed a start-up company, Tekna Plasma Systems Inc., which is a spin-off the University of Sherbrooke with the mandate of technology transfer and industrial developments in the area of thermal plasmas process technologies and equipment manufacturing. Over the past seventeen (17) years Tekna has grown to be a world leader in induction plasma technology with its induction plasma torches used world wide in a variety of industrial worthy processes for powder spheroidization and densification, nano-powder synthesis and induction plasma spraying for coatings and near net shape parts. Of particular interest is the scaling up of the technology to the hundreds of kW power level for industrial scale production of a variety of powders. The development of the supersonic attachment to the standard induction plasma torch allowing its use for the deposition of high quality coatings and ceramic membranes is another achievement that is changing the way induction plasma technology is being used in the thermal spray industry. Tekna work force exceeds presently fifty three (53) highly qualified scientific and engineering personnel with 70% of its sales directed to the export market in the USA, Europe and the Far East.

Since its establishment, Tekna has been recognized for its exceptional performance and contribution to the regional economical development of the Eastern Townships. The following distinctions were offered to Tekna by local and provincial professional associations;

- *Synergie Prize* offered jointly to Tekna and the University of Sherbrooke by *NSERC 2006*, for technology transfer and innovation.
- *Finaliste for the 'Mercuriades prize'* offered by the *Chamber of commerce of the province of Québec (2003)*
- *Distinction offered by the 'Maison régionale de l'industrie'*, on its 20th anniversary, *gala Distinctions industrielles (2001)*, category *'Technology and new economy'*.
- *Finaliste for the 'Mercuriades prize'* offered by the *Chamber of commerce of the province of Québec (1996)*.
- *Reconnaissance SDI (1996)*, Distinction offered by *Society for Industrial development of the Eastern Township* for outstanding performance.
- *Reconnaissance Estrie (1996)*, Distinction offered jointly by the *Chamber of Commerce of the city of Sherbrooke and the Eastern Township Chamber of Commerce* for best performance in the manufacturing sector – small enterprise.

3. GRADUATE STUDENTS SUPERVISED

1. Ionascut – Nedelcescu, 'Emission spectroscopic study of Dielectric Barrier Discharge and its afterglow', PhD. [M. Boulos, and D.V. Gravelle] (2009)
2. Christine Nessim, 'Nanopowder thin film coating using dielectric barrier discharges', PhD. [M. Boulos] (2008)
3. Yazid Lakhaf, 'Étude de l'interaction plasma/surface en écoulement supersonique par spectroscopie d'émission' MSc. [D.V. Gravelle and M. Boulos] (2006)
4. Jocelyn Veilleux, 'Caractérisation par interférométrie en lumière faiblement cohérente de milieux céramiques hautement diffusants' MSc. [C. Moreau and M. Boulos] (2006)
5. Philip Robin, 'Modélisation et diagnostic de barrières thermiques sous chargement thermique cyclique', Université de Sherbrooke, Ph.D. [F. Gitzhofer, M.I. Boulos] (2005)
6. Renouard-Vallet, G. 'Élaboration par projection plasma d'électrolytes de zircone yttrée denses et de faible épaisseur pour SOFC', Université de Sherbrooke, Ph.D. [F. Gitzhofer, M.I. Boulos] (2004)
7. Pu, W., "Projection de carbure de bore par plasma inductif en écoulement supersonique", Université de Sherbrooke, M.Sc.A. [M.I. Boulos] (2004)
8. Kouprine, A., "Thin Film Coating of Nano-Particles in a Capacitively Coupled RF Discharge", Université de Sherbrooke, Ph.D. [M.I. Boulos et F. Gitzhofer] (2003)
9. Branland, N., "Projection par plasma de dépôts de dioxyde de titane: contribution à l'étude de leurs microstructures et propriétés électriques", Université de Sherbrooke, Ph.D. [M.I. Boulos et F. Gitzhofer] (2002)
10. Léveillé, V. "Diagnostic du jet de plasma hf supersonique", Université de Sherbrooke, M.Sc.A. [M.I. Boulos et D.V. Gravelle] (2002)
11. Selezneva, S. "Modélisation des écoulements plasma supersonique", Université de Sherbrooke, Ph.D. [M.I. Boulos] (2002)
12. Xue, S. "Avancement dans la modélisation électromagnétique et fluide des plasmas inductifs", Université de Sherbrooke, Ph.D. [M.I. Boulos et P. Proulx] (2002)
13. Ye, R. "La dispersion et l'évaporation des particules turbulentes dans des plasmas à induction r.f.", Université de Sherbrooke, Ph.D. [M.I. Boulos et P. Proulx] (2002)
14. Blais, A. "Modélisation tridimensionnelle stationnaire d'un arc transféré influencé par un champ magnétique externe", Université de Sherbrooke, M.Sc.A. [P. Proulx et M.I. Boulos] (2001)
15. Bonneau, M.E. "Déposition d'électrolyte de type fluorite pour les SOFC en utilisant la projection de suspension par plasma", Université de Sherbrooke, M.Sc.A. [F. Gitzhofer et M. Boulos] (2001)
16. Nessim, C. "Synthèse des poudres ultrafines de TiO₂ par plasma inductif", Université de Sherbrooke, M.Sc.A. [M. Boulos et J. Jurewicz] (2001)
17. Merkhof, A. "Modèle intégré d'une installation et d'une validation intégrée", Université de Sherbrooke, Ph.D. [Boulos, M.I.] (1999).
18. Dignard, N.M. "Optimisation expérimentale de la sphéroidisation des poudres métalliques et céramiques par plasma inductif", Université de Sherbrooke, M.Sc.A. [Boulos, M.I.] (1998)
19. Mailhot, K. "Déposition par plasma de membranes de YSZ pour les piles à combustion", Université de Sherbrooke, M.Sc.A. [Boulos, M.I. et Gitzhofer, F.] (1998)

20. Yargeau, V. "Étude du traitement de déchets liquides par plasma inductif", *Université de Sherbrooke*, M.Sc.A. [G. Soucy, M.I. Boulos] (1998)
21. Bouyer, E. "Étude de la préparation de poudres et de dépôts à partir de suspension par plasma inductif", *Université de Sherbrooke*, Ph.D. [M.I. Boulos and F. Gitzhofer] (1997)
22. Voyer, J. "Étude d'émission acoustique de barrières thermiques sous des conditions de chargement thermique cyclique", *Université de Sherbrooke*, Ph.D. [M.I. Boulos and F. Gitzhofer] (1997)
23. Bergeron, E. "Étude du traitement thermique de déchets liquides dans un réacteur à plasma inductif", *Université de Sherbrooke*, M.Sc.A. [M.I. Boulos and G. Soucy] (1996)
24. Guo, J.Y. "Synthèse par plasma et frittage de poudres ultrafines de carbure de silicium", *Université de Sherbrooke*, Ph.D. [M.I. Boulos and F. Gitzhofer] (1995)
25. Rahmane, M. "Transfert de masse sous des conditions de transfert thermique", *Université de Sherbrooke*, Ph.D. [M.I. Boulos and G. Soucy] (1995)
26. Cao, M. "Mesures et modélisation d'un arc transféré de haute puissance", *Université de Sherbrooke*, Ph.D. [M.I. Boulos, D.V. Gravelle, J. Mostaghimi and P. Proulx] (1994)
27. Coulombe, S. "Diagnostic des particules en vol dans un plasma inductif", *Université de Sherbrooke*, M.Sc.A. [M.I. Boulos] (1994)
28. Fan, X. "Deposition of Alumina Free Standing Parts", *Université de Sherbrooke*, Ph.D. [M.I. Boulos and F. Gitzhofer] (1994)
29. Jiang, X.L. "Induction Plasma Spraying of refractory Metals", *Université de Sherbrooke*, Ph.D. [M.I. Boulos and F. Gitzhofer] (1994)
30. Merouche, K. "Composites à matrice d'aluminium projetées par plasma à courant continu", *Université de Sherbrooke*, M.Sc.A. [M.I. Boulos and F. Gitzhofer] (1994)
31. Chen, K. "Study of the Induction Plasma Spraying Process", *Université de Sherbrooke*, Ph.D. [Boulos, M.I.] (1993)
32. Li, R. "Mineral Processing Using Thermal Plasma Technology", *Université de Sherbrooke*, Ph.D. [Boulos, M.I.] (1993)
33. Laflamme, C. "Synthèse de poudres ultrafines de carbure de silicium dans un réacteur à plasma à courant continu", *Université de Sherbrooke*, Ph.D. [Boulos, M.I., Jurewicz, J.] (1992)
34. Njah, Z. "Étude laminaire et turbulente du mélange d'un ou plusieurs jets latéraux avec un écoulement à haute température", *Université de Sherbrooke*, Ph.D. [Boulos, M.I. and Mostaghimi, J.] (1992)
35. Soucy, G. "Synthèse de poudres ultrafines de Si_3N_4 par plasma inductif", *Université de Sherbrooke*, Ph.D. [Boulos, M.I. and Jurewicz, J.] (1992)
36. Essoltani, A. "Étude du rayonnement émis par un plasma d'argon en présence de vapeur métallique", *Université de Sherbrooke*, Ph.D. [Boulos, M.I. and Proulx, P.] (1991)
37. Robitaille, B. "Étude de la déposition par plasma h.f. à couplage inductif", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I. and Proulx, P.] (1991)
38. Beaulieu, M. "Caractérisation spectroscopique d'un plasma inductif sous pression atmosphérique et réduite", *Université de Sherbrooke*, Ph.D. [Boulos, M.I. and Gravelle, D.V.] (1989)
39. Gendron, R. "Mesure tri-dimensionnelle des champs de température dans un jet de plasma d.c.", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I., Gravelle, D.V.] (1989)
40. Sediri, M. "Caractérisation et fusion des poudres métalliques dans un four à arc transféré plasmacan", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I. and Jurewicz, J.] (1989)

41. El Hage, M. "Étude de modélisation de plasma h.f. en écoulement turbulent", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I. and Mostaghimi, J.] (1988)
42. Laflamme, C. "Production de composés aromatiques liquides à partir du gaz naturel utilisant un réacteur à plasma", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1988)
43. Njah, Z. "Modélisation mathématique de l'interaction d'un jet avec un écoulement isotherme et non isotherme", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I. and Mostaghimi, J.] (1988)
44. Benmassaoud, A.A. "Préparation de poudres ultrafines utilisant la technique des plasmas à induction", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I. and Jurewicz, J.] (1987)
45. Bokhari, A. "Sphéroidisation des poudres dans un réacteur à plasma", *Université de Sherbrooke*, Ph.D. [Boulos, M.I.] (1987)
46. Lemire, C. "Four à plasma à arc transféré", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I. and Jurewicz, J.] (1987)
47. Morel, C. "Synthèse de poudres ultrafines alliées Al/Cu dans un réacteur à plasma à induction HF", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I. and Roy, C.] (1987)
48. Proulx, P. "Modélisation mathématique des écoulements plasma-particules", *Université de Sherbrooke*, Ph.D. [Boulos, M.I.] (1987)
49. Robert, W. "Contribution à l'étude de la purification du silicium par voie plasma pour l'obtention du silicium de haute pureté", *Université de Sherbrooke*, Ph.D. [Boulos, M.I.] (1987)
50. Bronet, M. "Laser Doppler Anemometry in Gas-Solid Flow Under Ambient and High Temperature Conditions", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1986)
51. Proulx, P. "Interaction plasma-particules dans la modélisation des plasmas à induction", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1984)
52. Vachon, G. "Mesure simultanée de la taille et de la vitesse des particules par anémométrie à laser", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1983)
53. Robert, W. "Étude de l'alimentation et du transport pneumatique des poudres", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1981)
54. Gagné, R. "Étude de modélisation d'un plasma à induction généré à haute fréquence", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1980)
55. Girondin, M. "Le conditionnement et l'épuration des aérosols par lavage dans une tour du type petersen", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1979)
56. Salama, A.W. "Étude sur l'interaction de deux jets isothermes et non isothermes", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1977)
57. Méjean, L. "Caractéristiques rhéologiques des suspensions de tourbe", *Université de Sherbrooke*, M.Sc.A. [Boulos, M.I.] (1975)

4. CONTINUING EDUCATION COURSES

1. Boulos M.I.; Fauchais, P.; Heberlein, J. "Thermal Plasma Processing of Materials", *IUPAC International Summer School on Plasma Chemistry*, ISSPC-19, Bad Honnef, Germany (July 22-24, 2009)
2. Boulos M.I.; Fauchais, P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", *ITSC-09*, Las Vegas, USA, (April 30th -May 1st, 2009)
3. Boulos M.I.; Fauchais, P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", *ITSC-08*, Maastricht, (May 29-30, 2008)

4. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-07, Beijing, China, (May 10-11, 2007)
5. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-06, Seattle, USA, (May 12-13, 2006)
6. Boulos M.I.; Fauchais,P.; Heberlein,J.; Kugelschatz, U.. "Thermal Plasma Processing of Materials", *IUPAC International Summer School on Plasma Chemistry*, ISSPC-17, Toronto, Ontario (August 4-6, 2005)
7. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-05, Basel Switzerland, (April 28-29, 2005)
8. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-04, Osaka, Japan, (May 7-8, 2004)
9. Boulos M.I.; Fauchais,P.; Heberlein,J.; Kugelschatz, U.. "Thermal Plasma Processing of Materials", *IUPAC International Summer School on Plasma Chemistry*, ISSPC-16, Taormina, Italy (June18-20, 2003)
10. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-03, Orlando, Florida, USA (May 3-4, 2003)
11. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-02, Essen, Germany (March 2002)
12. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-02, Essen, Germany (March 2002)
13. Boulos M.I.; Fauchais,P.; Heberlein,J.; Pfender,E. "Thermal Plasma Technology", *IUPAC International Summer School on Plasma Chemistry*, ISSPC-15, Orleans, France, (July 4-6, 2001)
14. Boulos M.I.; Fauchais,P.; Heberlein, J. "Understanding and Improving Your Thermal Spray Processes", ITSC-99, Singapore (June 2001)
15. Boulos M.I.; Fauchais,P.; Heberlein,J.; Pfender,E. "Thermal Plasma Technology", *IUPAC International Summer School on Plasma Chemistry*, ISSPC-14, Prague, Czech Republic, (July 28-30, 1999)
16. Boulos M.I.; Fauchais,P.; Heberlein, J. "Fundamentals and Applications of Plasma Spraying", ITSC-99, Nice, France (May 1998)
17. Boulos M.I.; Fauchais,P.; Heberlein,J.; Pfender,E. "Thermal Plasma Technology", *IUPAC International Summer School on Plasma Chemistry*, ISSPC-13, Beijing, China, (August 16-18, 1997)
18. Boulos M.I., Fauchais P., Heberlein J., and Pfender E. "Thermal Plasma Technology", *IUPAC International Summer School on Plasma Chemistry*, ISSPC-12, Minneapolis (MN), USA (August 17-19, 1995)
19. Boulos M.I., Fauchais P., and Pfender E. "Advances in Thermal Plasma Spraying", *ASM International, National Thermal Spray Conference NTSC'93*, Anaheim (CA), USA (June 5-6, 1993)
20. Boulos M.I., Fauchais P., and Pfender E. "Advances in Thermal Plasma Spraying", *Deutch Vacuum Society, Thermal Spraying Conference - TS93*, Aachen, Germany (March 1-2, 1993)
21. Boulos M.I., Fauchais P., and Pfender E. "Advances in Plasma Spraying Science and Applications", *ASM International, International Thermal Spray Conference ITSC'92*, Orlando (FL), USA (May 30-31, 1992)
22. Boulos M.I., Fauchais P., and Pfender E. "Plasma Synthesis and Processing of Materials", *TMS, Symp. on Thermal Plasma Appl. in Materials and Metal. Processes*, San Diego (CA), USA (Feb 29 - March 1st, 1992)
23. Boulos M.I., Fauchais P., and Pfender E. "Materials Processing in Thermal Plasmas", *First European East-West Symposium on Materials and Processes*, Helsinki, Finland (June 16-18, 1990)
24. Boulos M.I., Fauchais P., and Pfender E. "Fundamentals and Applications of Plasma Spraying", *ASM International, National Thermal Spray Conference NTSC'90*, Long Beach (CA), USA (May 21-24, 1990)

25. Boulos M.I., Fauchais P., and Pfender E. "Materials Processing in Thermal Plasmas", *MRS, Material Science Technology*, San Francisco (CA), USA (April 19-21, 1990)
26. Boulos M.I., Mostaghimi J., and Proulx P. "Computation of the Flow, Temperature and Concentration Fields in an R.F. Analytical ICP", 1990 Winter Conference on Plasma Spectrochemistry, St-Petersburg (FL), USA (January 6, 1990)
27. Boulos M.I. "Fundamentals of Materials Processing Using Thermal Plasma Technology", *Canadian University-Industry Council on Advanced Ceramics, CUIAC*, Edmonton (Alberta), Canada (October 17-19, 1989)
28. Boulos M.I., Fauchais P., Mac Rae D.R., and Pfender E. "Thermal Plasmas, Technology and Applications", *IUPAC International Summer School on Plasma Chemistry, ISSPC-9*, Pugnochiuso, Italy (September 11-13, 1989)
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6.5. Papers Published in Conference Proceedings

216 papers published in conference proceedings

6.6. Invited and Plenary Lectures

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